

L. W. Lynch
BRC

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RESULTS OF PLANTING PONDEROSA PINE SEED
IN CONTAINERS, 1956

Several years ago the idea was conceived of planting ponderosa pine seed in containers, raising them as seedlings in the containers for 1 or 2 years and then outplanting the container with the seedling in it on severe sites. Preliminary experiments confirmed the scheme as feasible and it was decided to give it a thorough trial at the Boise Basin Experimental Forest headquarters in Idaho City, Idaho.

A suitable structure, approximately ^{36 x 12} ~~30 x 8~~ feet and 7 feet high was constructed at the south end of the headquarters administrative site, and so designed that it was rodent- and bird-proof. Approximately 50 percent shade was provided by lath suitably arranged on the top and the four sides. Doors were made at each end to allow convenient accessibility. A sprinkler system was installed in the middle so that all parts of the floor space could receive a fine spray of water. Boxes were made to hold approximately ³⁶ ~~64~~ containers of the more commonly used sizes. These boxes were made with hardware cloth bottoms to permit drainage and held into place by cleats which allowed the box to be raised $\frac{3}{4}$ of an inch off the ground. The pinewood used was treated with pentachlorophenol to minimize decay of the wood.

Several sizes and types of containers were used. The Sefton Fibre Can Company, a subsidiary of Container Corporation of America, cooperated in the experiment on a 50-50 cost basis, and providing some 600 tubes

of 12- and 16-inch lengths, in two types of fibre construction, two diameters, 1 inch and $1\frac{1}{2}$ inch, and with metal bottoms provided with a hole for drainage. The Boise Payette Lumber Company provided 5,000 containers of 12" and 18" length and $1\frac{3}{4}$ " diameter. These were subsequently dipped in hot paraffin to water proof them. In addition to these types of containers, some plain square tarpaper ($1\frac{3}{4}$ " on a side and 12" in length) types were used.

Ponderosa pine seed from the 1955 crop on the Boise and Payette National Forests were suitably stored and later stratified and sown in June after the containers had been filled with a mixture of soil and sphagnum peat moss, approximately two-thirds of the former to one-third of the latter by volume. All tubes were watered with a mixture of a fungicide ("Orthocide") as precaution against damping off organisms. Some difficulty was experienced with the seed which had sprouted to some extent during stratification but in spite of this, good results were obtained in initial germination and no failures were experienced.

3/4" x 1/2"
P.W.

During the second week in July when seedlings started to appear in quantity some dying was noted. This increased in severity until the end of the month and continued into August at which time a replanting was made of those tubes in which mortality was complete. Once more mortality was experienced but not on such a large scale as before. Initially this was thought to be an unusual type of damping off or seedling disease, but later it was finally decided to be a result of

fumes from the pentachlorophenol in the boxes holding the containers and seedlings.

The mortality of seedlings continued but not on as severe a scale as before, although widespread enough to prompt a revision of the outplanting in the fall of 1956 and spring of 1957.

On the whole the containers stood up well under the watering schedule which was 5 to 10 minutes of watering nightly during the seedling development stage. Apparently this schedule is heavier than needed and after seedlings appear above ground watering should not be made oftener than once a week and possibly once every 2 weeks. There was some uncurling of outer strands of the fiber cylinder containers, both in the 1-inch and 1½-inch sizes but not serious enough to interfere with the growing of the seedlings or the later outplantings.

It is planned to continue the experiment in 1957 by first stratifying the seed to be planted at a lower temperature, probably in the neighborhood of 35° F. for a month and to resow seed in the containers which have failed to produce seedlings. The same fungicide will be reapplied; some additional containers of the square tarpaper type, but of smaller size, possibly 1½ inches on a side will be employed, and no outplanting until the fall of 1957. Tentatively, it has been decided not to construct new boxes to hold the containers during the 1957 growing season. It is believed that the watering, the exposure of weather during the 1956 growing season, and the continued exposure during the

not applicable

*1 or 2 months only
a week or 2 weeks
then mount kept
enough.
P.W.*

winter of 1956-57 and early spring of 1957 will have dissipated all possibility of further severe damage by pentachlorophenol fumes to the seedlings. No fumes could be detected in the late fall of 1956 but a careful examination of the containers prior to planting will be made in the spring of 1957 and a final decision made at that time.

James D. Curtis

JAMES D. CURTIS

